9.3 Error code / Error chart / Remedy

	Error / Cause		Display
100	On door US, Reed sensor S 1 or auxiliary relays K1 is not closed or the potentiometer value is not within the proper range or has changed during the current program. Query input S110/111 and R1/2 only during current program.		**Door is open** **Error code 100**
	Cause:	**Remedy:**	
	Door switch S1 is closed S110	defect, cable break, adjust	
	Signal cable linear drive interrupted	interrupt of cable of connector	
	Linear drive	replace	
	Relay K1	replace	
	Actual value pot meters not in target range	readjust doors	
	Chack all plug connections		
101	(Only for WD 250/) The opening sequence of **US** door takes more than 20 seconds or the linear drive is defective. Control system will interrupt the opening sequence and display error if either the opening process for door with lifting motor US (M 35) takes more than 16 seconds until the lower Reed S 112) or the potentiometer value remains within the 'closed' range. Query input S 112, R1 only during opening procedure.		**Door does not open** **Error code 101**
	Cause:	**Remedy:**	
	Manual linear drive on door panel print (buttons)		
	Open	re-calibrate door, exchange Linear motor	
	Activate door drive motor M 35 with control K35	replace door motor or capacitor	
	Reed sensor S 112 does not open	replace S 112	
	Check all plug connections	re-crimp S 112 to print	
	Safety relay ESR 1		
	Relay ESR 1 LED green	no action required	
	LED yellow = resistance incorrect	replace safety strip	
	LED red = cable break	replace safety strip or find Cable break	
102	The closing process of the **US** door takes more than 20 seconds or linear drive is defective. The control system will interrupt closing sequence and displays error if either the closing procedure of door with lifting motor US (M 35) takes in excess of 16 seconds until the upper Reed sensor (S 1/K1) closes or until the potentiometer value R1 comes within 'closed' range. Query of input S 110, R1 only during closing process.		**Door does not close** **Error code 102**
103	The safety strip of door **US** has triggered. The control system will interrupt closing sequence and displays error if the closing procedure of door with lifting motor US (M 35) the safety strip (S 209) opens the relay ESR1 and reopens the		**Object in door** **Error code 103**

	door (M 35). Query input S109 only during closing procedure.	
105	On door **US,** the Reed sensor or the auxiliary relay S 2 is not closed or the UCvalue is not within the 'closed' range or has opened or has gone outside of range during the current program. Program will shut down under error display. Query input S111, R2 only during current program. In case of single door model (Pos. 5.11), there will be no query.	**Door is open** **Error code 105**
106	The opening process of door **CS** takes more than 20 seconds. If opening process of door with lifting motor US (M 37) takes mo0re than 16 seconds until the lower Reed sensor (S 113) opens, or if potentiometer R2 value does not go out of 'closed' range, the control system will interrupt the opening process under display of error. Query input S113, R2 only during opening process. In case of single door version (Pos. 5.11), there is no query.	**Door does not open** **Error code 106**
107	The closing process of door **CS** takes more than 20 seconds. If closing process of door with lifting motor CS (M 37) takes more than 16 seconds until the upper Reed sensor (S2/K2) opens, or if potentiometer R2 does not come into 'closed' range, the control system interrupts the closing process and displays error. Query input S111 only during closing process.	**Door does not close** **Error code 107**
108	The safety strip of door **RS** has triggered. If during the closing process of door CS (M 37), the safety strip (S 210) opens the relay ESR2, the control system will interrupt the closing process and display error and reopens the door (M 37). Query input S110 only during closing process. **Cause:** — **Remedy:** Relay ESR 1 green — no action required LED yellow = resistance incorrect — replace safety strip LED red = cable break — replace safety strip or find cable break Safety relay ESR 1 is defective — replace ESR 1	**Object in door** **Error code 108**
109	A communications error between processor and door press prints has occurred or the door press print has a defect. **Cause:** Door pressure print defective Fuse blown Connector plug has loose contact Coding switch sitting in wrong position **Remedy** Replace door pressure print Check connectors, fuse and coding switch and correct -> 8	**No communication** **Error code 109**
110	The minimal pressure in the wash system has been undercut. If the pressure switch 150 m bar (S 211) designed to monitor pump pressure, remains open for 90 seconds past start of fill phase, the control system will interrupt the current program and display error. Query input S211 only active with media M1-4, M7-9 for 90 seconds after program time and under 85 °C wash liquid temperature. Over 85°C, query is inactive.	

	Cause: — **Remedy:** Rotation direction of wash pump — Reverse rotation direction by exch. Phase 1 and 2 Foam: — flush chamber with warm water Incorrect conn. of wash additive — correct container connection Pump pressure switch S 211 does not close — replace	
112	Floor pan has collected water. If input SB (optional float switch) is longer then 2 seconds closed, the control system will interrupt the current program and display error. Query input SB also in "Program ready" mode. **Cause:** — **Remedy:** Coarse or fine mesh sieve clogged — clean sieves Circuit over switch S B is open — locate interruption Leakage in system — fix leakage, dry basin	**Machine leaks** **Error code 112**
113	If input S 109 (opener) pressure switch opens - at 35 mm water column – within 2 seconds, display shows malfunction "Sieve clogged", current program is interrupted Query input differential pressure switch (normally closed) S 109 during entire program cycle with water M1-M4 and M9 only active during pre-rinse cycle F1. If an error occurs during pre-rinse, the program automatically repeats the pre-rinse cycle without program interruption. If the error occurs a second time, the current program is interrupted by means of 113. See function F1. **Cause:** — **Remedy:** Coarse or fine mesh sieve clogged — clean sieves Circuit over switch S 109 is open — locate interruption foam is being formed — Change programmparameter In case of significant loading with blood, the machine detects foam formation and automatically directs a repeat of the pre-rinse cycle. High quality pre-rinsing is an important prerequisite for efficient cleaning. Note: Foam is being formed that has an adverse effect on cleaning efficiency. Blood remnants left after the pre-rinse cycle enhance so-called soaping during the subsequent alkaline cleaning cycle. That results in reduced cleaning efficiency which increases the prion risk.	**Screen cogged** **Error code 113**
121	The level sensor is defective or not connected. If level sensor (P 1) is defective or not connected for more than 2 seconds (the value must be between 0.2 and 4.5 V), the control system interrupts the current program and displays error. Query limit values input P1 during program cycle.	**No water** **Error code 121**
130	The temperature sensor on bottom of wash chamber is defective or not connected. If the temperature sensor NTC 1 For the wash chamber is defective or not connected (the value must be between 0 and 150 °C), the control system interrupts the current program and displays error.	**NTC 1 defective** **Error code 130**

	Query of limit value input NTC 1 during program cycle. **Cause:** **Remedy:** If analysis T 1 = sensor defective — fix wire break, replace sensor Resistance readings: 20°C = 12.490 K Ohm, 25°C = 10.000 K Ohm, 30°C = 8.060 K Ohm, 35°C = 6.356 K Ohm 40°C = 5.331 k Ohm, 45°C = 4.373 K Ohm, 50°C = 3,606 K Ohm, 55°C = 2.989 K Ohm 60°C = 2.949 K Ohm, 65.°C = 2.085 K Ohm, 70°C = 1.753 K Ohm, 75°C = 1.481 K Ohm	
131	The temperature sensor in the dryer is defective or not connected. See malfunction 130	**NTC 2 defective** **Error code 131**
132	The temperature sensor NTC 3 is defective or not connected. See malfunction 130	**NTC 3 defective** **Error code 132**
133	The temperature sensor in the DI boiler is defective or not connected. See malfunction 130	**NTC 4 defective** **Error code 133**
134	The Temperature sensor on bottom of wash chamber is defective or not connected. See malfunction 130	**NTC 5 defective** **Error code 134**
135	The temperature sensor in the DI boiler is defective or not connected. See malfunction 130	**NTC 6 defective** **Error code 135**
136	The temperature sensor on bottom of wash chamber is defective or not connected. If temperature sensor PT100 1 is defective or not connected (value must be between 0 and 150 °C), the control system will interrupt the current program and display error. Monitoring limit value input PT100 during program cycle.	**PT100 1 defective** **Error code 136**
137	Temperature sensor in dryer is defective or not connected.	**PT100 2 defective** **Error code 137**
138	Temperature sensor PT100 is defective or not connected.	**PT100 3 defective** **Error code 138**
139	Temperature sensor PT100 3 is defective or not connected.	**PT100 4 defective** **Error code 139**
140	Float switch SD in DI boiler remains open even 30 minutes following start of filling process. No DI water intake to boiler. Query input S SD only during intake process. **Cause:** **Remedy:** DI water valve closed — open DI water valve DI valve defective — clean or replace Float switch SD is defective — replace SD (de-install heater)	**No DI water** **Error code 140**
140	**Adjustment of limit value** for query input S SD during intake process.	**DI boiler SD**

	10 – 45 min., default = 15 min.	***15*** **Minutes**
141	Working level with CW during intake process has not been attained. No cold water intake into wash chamber or door contact of door (S1 or S2) is open. If during filling of wash chamber with CW (valve Y 11) the operating level 2 of level sensor P1 is not attained within a predetermined period of time tcw (5 min.), the control system will interrupt the current program and display error. Monitoring limit value: only during intake process until operating level 2 is attained. **Cause:** — **Remedy:** Activate with Y 11 CW valve closed — open CW valve CW valve defective — clean replace valve Level monitoring system P1 leaks — check hoses S 110 / S 111 door switch remains open — check door switch and position	**No CW water** **Error code 141**
141	**Adjustment of limit value** for cold water intake. 1 - 15 min., default = 5 min.	**CW water P1** ***5*** **Minutes**
142	During WW intake process, the operating level is not attained. No warm water intake into wash chamber or door contact of door (S1 or S2) is open. If during WW intake into wash chamber (valve Y 12), working level 2 of level sensor P1 is not attained within a predetermined period of time tww (5 min.), the control system will interrupt the current program and display error. Monitoring limit value: As under 141 See 141	**No WW water** **Error code 142**
142	**Adjustment of limit value** for warm water intake tww. 1 - 15 min., Default = 5 min.	**WW water P1** ***5*** **Minutes**
143	During intake process with DI water, working level is not attained. If during intake process with DI water (valve Y 13), operating level 2 is not attained within a predetermined period of time tvek (7 min.) the control system will interrupt the current process and display error. Monitoring limit value: As under 141 See 141	**No Di water** **Error code 143**
143	**Adjustment of limit value** fo DI water intake tvek. 1 - 20 Min., Default = 7 Min.	**DI water P1** ***7*** **Minutes**
146	Working level with preheated DI water (M9) from boiler is not attained during fill process. If during intake process of preheated DI water (drain pump M32), the operating level 2 is not attained within a predetermined period of time tvew (3 min.), the control system will interrupt the current process and display error. Monitoring of limit value: as under 141 **Cause:** — **Remedy:** Using control (key 3), activate K 41 Relay K 14 is defective — replace	**No DI water** **Error code 146**

	Feed pump M 14 is defective — repair / exchange Level system leaks — check hoses	
146	**Adjustment of limit value** for preheated DI water intake tvew. 1 - 15 min., Default = 3 min.	**DI water boiler** ***3*** **Minutes**
147	**The max overflow level has been reached.** If for more than seconds, the overflow level of level sensor (P1) has been exceeded, the control system will interrupt the current process and display error. (See chapter 6 Wash Chamber Level). Limit value $P_{u\ static}$ = 3.2 V (without wash pump M 15) Limit value $P_{u\ dynamic} = P_{u\ static} - 1.3$ V (with running wash pump) **Cause:** — **Remedy:** Wash pump M 16 is deductive — Check Contact K16 or wiring connection Pressure switch S211 stays always open — Check plugs and wiring Water valve doe not close properly — replace valves	**Overflow level** **Error code 147**
148	**Fill level monitoring recognizes no level change during drainage of wash chamber.** If during the wash chamber drain process with drain valve Y31 or drain pump, the level has not dropped to 0.7 V (empty level + 0.2 V) within a predetermined period of time, the control system will interrupt the current process and display error. Monitoring of limit value: only during drain process until empty level is attained. Cause: The drain is plugged or drain pump is broken. **The wash pump contact K 15 stays stuck closed** If during the draining process (Y31 is activated) the pressure switch S211 is still closed, the control will interrupt the current process and display error. Monitoring of limit value: 5 sec. after and during drain process (5. Sec after Y31 is activated). **Cause:** — **Remedy:** Pressure switch S211 stays always closed — replace Pressure switch S211 Activate Y 31 (key 3) Wire break from CPU to valve Relay Y 31 does not react — replace control system Drain valve defective — replace Drain clogged (building side) — clean Relay for wash pump K 15 remains stuck	**No drainage** **Error code 148**
148	**Adjustment of limit value** for drainage ta. 3 - 15 min., default = 3 min.	**Drainage P1** ***3*** **Minutes**
149	The minimal operating level (water heater no longer immersed) has been undercut during wash phase. Loss of water during wash phase. If during wash cycle, the minimum level of 1 V is undercut for 15 seconds, the control system will interrupt the current process and display error. Monitoring limit value: only during heating phase. **Cause:** — **Remedy:**	**Level too low** **Error code 149**

	Drain valve leaks — clean membrane or replace Exhaust has excessive suction power Wtare vapor is being removed — reduce negative pressure Exhaust flap remains open at all times — repair Exhaust flap remains closed at all times Liquid is drained by means of pressure switch S31 — repair Exhaust system is closed, expanding air cannot escape — check exhaust system Air presses back by way of exhaust system — install motorized flap That opens overflow level Too much air is aspirated during fill process	
150	The maximum level (water is over door threshold) has been exceeded. Undesirable water intake into wash chamber. If level of 3.2 V is exceeded for 3 seconds, the control system will interrupt the current process and display error. As long as the level is over 3.2 V, the door remains locked. Monitoring limit values: as long as machine is under power. **Cause:** — **Remedy:** Water valves are not tight — replace water valves	**Level too high** **Error code 150**
151	**Flow meter 1 does not recognize the required number of pulses or to high dosing.** If in a program step phase dosing with D1 and flow meter 1 is programmed, during dosing with pump M 21, within **1 minute** a minimum of 10 pulses (in the beginning it is possible that only air will come through), and after each further **6 sec. at least 50 impulses** take place. The flow meter impulse is supervised during the entire dosing phase on minimum throughput: 8 Imp. per sec. of flow meter 1 must be counted. Otherwise, the control system will interrupt the current process and display error. The limit value for interrupt criteria X pulses in 6 seconds is calculated as follows: The pulse value / liter found in SW module for configuration dosage 2 used for calibrating is divided by a constant K = 77. Example: Pulse value / liter divided by K = limit value X Pulse value / liter = 3610 X = limit value = 3610 / 77 = 47 Error 151 is flashed if less than 47 pulses are registered within 6 seconds. **Overdosing** On flow meter , 6 impulses within 6 seconds must not be exceeded. **Die maximum dosing is limited to 500 ml.** Monitoring: Over full program cycle and when no dosing takes place, i.e. no output K21 – K 24 is active (Program run). **Cause:** — **Remedy:** Dosing module (key 2) Check flow meter 1 — replace flow meter 1	**false dosing** **D1**

	Hose of dosing pump defective — replace Dosing pump defective — replace Dosing lines clogged — clean IF DOSING PUMP KEY IS PRESSED, MACHINE GOES INTO ERROR MODE	
152	Flow meter 2 does not recognize the required number of pulses during dosing. As per 151	**false dosing** **D2**
153	Flow meter 3 does not recognize the required number of pulses during dosing. As per 151	**false dosing** **D3**
154	Flow meter 4 does not recognize the required number of pulses during dosing. As per 151	**false dosing** **D4**
161	The temperature sensor in the wash chamber does not recognize any change in temperature during heating phase. If during the heating phase in the wash chamber (NTC 1), no minimal temperature change of 1°C is detected over a predetermined period of time th (3 min.) or during the dwell phase the temperature is no longer attained for more than th (3 min.), the control system will interrupt the current process and display error. Monitoring limit values: during heating phase with water. **Cause:** — **Remedy:** Activate heater contactor K 16 with control (key 3), only to be done if there is water in tank Heater contactor is defective — replace Heater is defective — replace Cable connections are burnt — replace connector Drain valve leaks — clean / replace membrane Exhaust system has excessive suction power — reduce negative pressure Exhaust flap remains always open — repair	**No heat** **Error code 161**
161	**Adjustment of limit value** minimal water heating th. 1 - 6 min., default = 3 min.	**Delta Temp. NTC 1** ***3*** **Minutes**
162	The temperature sensor in DI boiler does not recognize any change in temperature during heating phase. If during the heating phase in the DI boiler (NTC 4), no minimal change in temperature of 1°C over a predetermined period of time thve (5 min.) is recognized, the control system will interrupt the current process and display error. Monitoring limit values: during heating and dwell phase.	**No heat** **Error code 162**
162	**Adjustment of limit value,** minimal water heating in DI boiler thve. 1 - 6 min., default = 5 min.	**Delta Temp. NTC 4** ***5*** **Minutes**
163	**Temperature overrun** In case water temperature overshoots target value by 8°C during water steps M 1, 2, 3, 4, 7, 9, active process is interrupted. Cut-off criteria:	**Water too warm** Error code 163

	If water temperature of NTC 1 is exceeded by 8°C for 1 minute after the fill process during a water step M 1, 2, 3, 4 or 9, the SW cuts off the current process. If no water temperature is entered (00 default), monitoring is inactive and no error is indicated. In function cold pre-rinse F1, max. permitted temperature is 45°C. If water temperature exceeds that value, process is also interrupted. Interrupt criteria: If under function F1 a temperature of 00°C is entered and water temperature of 45°C of NTC 1 is exceeded for 1 minute, the SW shuts current process down. **Cause:** — **Remedy:** Water media are interchanged — properly connect water Programming error of media assignments — check programs Heater contactor K 16 remains stuck — replace	
188	In configurations module 2, „Digital Interface 1", the error display must be activated. Default = off. **Cause:** Interface print for Input / Output defective Fuse blown Connector has loose contact Coding switch in wrong position **Remedy** Replace interface print Check connector, fuse and coding switch and correct setting -> 4	No communication Error code 188
189	**Cause:** IPD is defective Door fuse blown Connector has loose contact Coding switch in wrong position **Remedy** Replace IPD Check connector, fuse and coding switch and correct setting -> 2	No communication Error code 189
190	**Cause:** General communication problem of SPI buss due to voltage drop, fuse door pressure print of interface print is defective, cable interruption, connector has loose contact, a code switch sits in position of another print. Remedy Fix cable break Replace fuse Check connector, fuse and coding switch and correct setting	No communication Error code 189